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ABSTRACT

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# An Improved Model for Evaluating Minority and Non-Minority Students with Learning Disabilities

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Abstract

Due to the significant over-representation of minority students identified as learning disabled, this study investigated the effects of modifying the discrepancy formula between intelligence and achievement commonly used to identify and place school age students in learning disabled programs. Three modifications were applied to the discrepancy formula using a sample of 123 students currently being served in learning disabled classes in a school district in Mississippi. The modifications to the discrepancy formula consisted of the following: (1) using only the full scale IQ, thereby eliminating the choice of using the higher of the verbal or performance IQ, (2) raising the full scale IQ to a minimum of 85, and (3) raising the discrepancy between intelligence and achievement scores to approximately 1½ standard deviations (22 points) with the sole use of full scale IQ. The results indicated that raising the minimum full scale IQ to 85 in the discrepancy formula resulted in the greatest reduction to the over-representation of minority students being placed in classes for students with learning disabilities. Suggestions for future research in this area are offered.

# An Improved Model for Evaluating Minority and Non-Minority Students with Learning Disabilities

The number of students in special education has grown every year since the passage of The Education for All Handicapped Children Act (P.L. 94-142) in 1975. This growth has resulted in a special education classification for approximately 12% of public school students. Some authorities feel the incidence of special education placement has reached crisis proportions (see for example, Briand, 1995).

A portion of the increase in special education placement can be attributed to such developments as an improved awareness of mild disabilities, an increased knowledge of special education services provided by schools, and advances in neonatal treatment. These factors, however, likely account for only a small fraction of the overall growth. A significant portion of the increase can be attributed to the growing practice of labeling and placing culturally diverse students in special education. Culturally diverse students appear to be at significant risk for special education assessment and placement. As noted by Utley (1995), "culturally and linguistically diverse students face quadruple jeopardy due to a combination of factors, such as poverty, language, culture, and/or disabling condition; this has devastating effects on their educational opportunities and makes them vulnerable to placement in special education" (p. 303).

African-American students, in particular, are over-represented in special education. African-American students, who comprise 14% of the school population, constitute 24% of the special education population. The representation of African-American students in selected categories of disability are: deaf-blind, 29%; visual impairment, 31%; and orthopedic

impairment, 23%. Regardless of the category of special education, African-American students are over-represented (U.S. Department of Education, 1992).

This over-representation of culturally diverse students is also pronounced in the area of learning disabilities. Students from culturally diverse backgrounds face appreciable risk for classification as learning disabled (Artiles & Trent, 1994; Utley, 1995; Utley, Haywood, & Masters, 1991).

The field of learning disabilities, itself, is in a state of flux. As noted by Heward (1996), "No area of special education has experienced as much rapid growth, extreme interest, and frantic activity as learning disabilities" (p. 190). The growth in learning disabilities has been dramatic in the 22 years since P.L. 94-142 was enacted. In 1976-1977, some 23% of all students in special education were identified as having a learning disability. That number has now changed to over 50% of the special education population.

The growth in the field of learning disabilities has not gone unnoticed. Among other criticisms, a loose definition of learning disabilities has attracted particular attention. Learning disabilities appears to defy a precise description. Definitions of learning disabilities abound in an attempt to operationally define this exceptionality (Shaw, Cullen, McGuire, & Brinckerhoff, 1995). Lerner (1997), a noted authority in the field, perhaps says it best, "Indeed defining this population is considered such an overwhelming task that some have likened learning disabilities to Justice Potter Stewart's comment on pornography: impossible to define, 'but I know it when I see it'" (p. 8).

Mississippi's situation is reflective of the national problems facing the area of learning disabilities. The statewide growth in identified students with learning disabilities far exceeds

national growth patterns. Between the 1976-1977 and 1992-1993 school years, Mississippi experienced a 1,020% increase in the number of students identified as having a learning disability (U.S. Department of Education, 1994). This increase was the largest of any state and is considerably larger than the national mean increase of 198%. Just as definitions vary, assessment and placement practices vary.

An examination of Mississippi's assessment and placement guidelines reveals a variety of routes through which a student may be labeled as having a learning disability. Mississippi students may be classified as learning disabled if the assessment shows a significant discrepancy between two achievement tests or if the intelligence test has an unusual scatter in the subtest scores. These placement options are, however, used infrequently. Most students are labeled by the use of an intelligence-achievement discrepancy.

The IQ-achievement discrepancy formula is perhaps the most common placement procedure in the United States. This formula is used in 37 (74%) of the states (Payette & Clarizio, 1994). However, with its popularity, has come increasing criticism as to the validity of this approach (see for example, Spear-Swerling & Sternberg, 1998). Among other limitations, no mathematical formula can clearly describe human characteristics. Discrepancy formula procedures focus "exclusively on the relationship between potential and achievement measures and ignore other learning characteristics unique to individuals with learning disabilities. Many human and clinical factors cannot be put into any formula and other imperative information must also be considered" (Learner, 1997, p. 98).

In most cases, the IQ-achievement discrepancy formula is used to describe a difference of at least one standard deviation between the full scale IQ score and the subtest scores on a

standardized achievement test. The Mississippi Department of Education allows placement using that formula along with two other discrepancy formulas. In Mississippi, students can be identified by a discrepancy between an achievement score and either the full scale IQ, the performance IQ, or the verbal IQ. Many states and agencies, such as Vocational Rehabilitation, restrict the discrepancy to differences between achievement scores and the full scale IQ alone.

The Mississippi definition of learning disabilities, nearly identical to the Federal definition, states:

> A child with a specific learning disability is one who has a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell or to do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include students who have learning problems which are primarily the result of visual, hearing, or motor disability, of mental retardation, of emotional disturbance, or of an environmental, cultural, or economic disadvantage. (Mississippi Department of Education, 1993, p. 86)

The eligibility and placement procedures in Mississippi appear especially broad. One outcome of such varied placement options is the over-identification of at-risk students. Some culturally diverse students are especially vulnerable for learning disabilities placement. Without rigor in the assessment and eligibility guidelines, the category of learning disabilities can be used to serve any low-achieving student.

A re-examination of the placement options in Mississippi appears warranted. If the

category of learning disabilities is being overused, additional stringency should be applied to the placement procedures. Possible solutions include the following: using only the full-scale IQ in the IQ-achievement discrepancy formula, limiting placement to students with a full-scale IQ score in the average range (85 and above), and, finally, requiring a discrepancy of 1½ standard deviations in the formula.

The purpose of this study was to determine the effects of more restrictive assessment formulas on the placement patterns of culturally diverse students in Mississippi. The specific research questions to be addressed include:

Question #1. Would limiting eligibility to a discrepancy between the full-scale IQ and achievement reduce the number of culturally diverse students identified as learning disabled?

Question #2. Would limiting eligibility to students who had full-scale IQ scores of 85 and above reduce the number of culturally diverse students identified as learning disabled?

Question #3. Would limiting eligibility to students who had achievement scores 1½ standard deviations below their full-scale IQ scores reduce the number of culturally diverse students identified as learning disabled?

Question #4. Would modifying eligibility requirements reduce the disproportionate placement of culturally diverse students in special education?

## Method

### Subjects

All data were collected from one district of 4,100 students. The district serves a Mississippi community of approximately 28,000 persons. Demographic data on the district revealed that 62.9% of the students were African-American, 33.2% were Caucasian, 3.6% were

Asian-American, and 0.3% were characterized as "other". Student records were used to answer the research questions. The records were accessed by school district personnel following administrative and school board approval. The principal investigators received only non-identifying assessment and placement information on each student. The study included all students who met the criteria of: placement in special education, enrollment in grades 1-8, and classification as learning disabled due to an intelligence-achievement discrepancy. Table 1 indicates the breakdown of students by gender and ethnicity.

Procedures

Assessment and placement data on each student were analyzed including the student s gender, ethnicity, verbal intelligence quotient, performance intelligence quotient, full scale intelligence quotient (based on the WISC-III), and standardized reading and math scores (based on individual achievement tests commonly used by school psychologists, e.g. Woodcock-Johnson Psychoeducational Battery-Revised, and the Key Math Diagnostic Arithmetic Test).

All data were entered and analyzed using a frequency of occurrence of variables with an SPSS statistical package. The analysis described the current placement patterns of students classified as learning disabled. More specifically, the analysis attempted to determine the impact on student placement when placement criteria were altered in the following ways:

1. eligibility using one-standard deviation (15 points) discrepancy between full-scale IQ and achievement;

2. eligibility using one-standard deviation (15 points) discrepancy between a full-scale IQ of 85 and above and achievement (with 85 representing the lower limit of the broad range of normal intelligence); and

3. eligibility using one and one-half standard deviation (22 points) discrepancy between full-scale IQ and achievement.

## Results

Question #1

To answer Question 1, the researchers modified eligibility criteria to use only the full scale IQ in the discrepancy formula. As can be seen in Table 2, a change to the sole use of the full scale IQ resulted in an overall reduction from 123 to 72 eligible students with a corresponding reduction of 105 to 58 African-American students. This represents a 45% decline in the number of African-American students identified as learning disabled.

Question #2

In response to Question 2, the researchers modified eligibility criteria to use the full scale IQ of 85 and above in the discrepancy formula. As evident in Table 2, this formula resulted in an overall reduction from 123 to 50 eligible students with a corresponding reduction of 105 to 38 African-American students. This represents a 64% decline in the number of African-American students identified as learning disabled.

Question #3

To answer Question 3, eligibility criteria were modified to use both the full scale IQ and a discrepancy of approximately 1½ standard deviations (22 points) in the discrepancy formula. As seen in Table 2, this modification resulted in an overall reduction from 123 to 36 eligible students with a corresponding reduction of 105 to 29 African-American students. This resulted in a 72% decline in the number of African-American students identified as learning disabled.

Question #4

Question 4 addressed the effect of modified eligibility criteria on the ethnic makeup of students identified as learning disabled. As can be seen in Table 2, the columns labeled African-American and Caucasian illustrate the various reductions in placement of African-American students. Each modification resulted in fewer African-American students identified as learning disabled. It is of note, however, that the use of only the full-scale IQ in the formula resulted in the smallest change in minority ratio (85.4% to 81.7%). The use of a 1½ standard deviation (22 point) discrepancy between the full-scale IQ and achievement resulted in a mere 4.8% change in the ratio of African-American students identified as learning disabled.

It is of special interest that the largest change in the ratio of African-American students identified as learning disabled, occurred when the eligibility criteria were modified to keep the current 15 point discrepancy but use a full scale IQ of 85 and above. Of the 50 students identified under this modification, only 38 (76%) were African-American. This percentage more closely approximates the ethnic breakdown of the district at large.

## Discussion

As the field of learning disabilities has evolved from its beginning with pioneers such as Kirk, Osgood, and Myklebust, educators have expanded and possibly distorted the original components of the disability. Early, as well as many current, researchers believe that this population of students was characterized by normal intelligence with specific learning or processing deficits. Most special education teachers graduating from colleges of education have been pedagogically trained with this perspective. In addition, most teacher preparation programs, leaders in the field of learning disabilities, and respected research still support this viewpoint.

Today, however, the relationship between learning disabilities and normal intelligence in many states has all but disappeared.

The data indicated that each of the three modifications resulted in reduced numbers of students eligible for learning disabled classes. This is not surprising as more restrictive assessment criteria will obviously result in smaller numbers of eligible students. The single largest reduction occurred when the discrepancy formula utilized 1½ standard deviations between the full scale IQ and achievement. This modification significantly reduced the number of African-American students, but had limited impact on the ratio of African-American students. The smallest reduction occurred when the discrepancy formula utilized a one standard deviation between full scale IQ and achievement. This modification also had limited impact on ethnic disproportion.

The more important issue, however, was not a simple reduction of eligible students, but also the overrepresentation of African-American students. The modification that both reduced the total number of eligible students placed in learning disabled classes and reduced disproportion was the utilization of one standard deviation discrepancy between a full scale IQ of at least 85 and achievement. This is not totally surprising given the lower obtained scores of African-American students on traditionally normed intelligence tests such as the WISC-III and the Stanford-Binet IV.

Some would argue that these students (scoring below 85 IQ) are in need of special education services. The researchers do not dispute their need for assistance, but feel strongly that they do not fit the traditional profile of students with a learning disability. Students with measured IQS below 85 or who have moderate learning discrepancies clearly represent a separate

population. Schools generally accepted their responsibility for serving this population before the field of learning disabilities was established at the national level. The needs of low achieving students might be best met through the restoration or addition of services such as certified remedial reading teachers, Chapter I programs, summer programming, and nongraded school curricula, where a student progresses at his/her own rate.

Further research appears to be needed in the area of learning disability eligibility. A major topic for investigation should be the factors which contribute to minority overrepresentation in learning disabilities and other special education categories. Among the factors which should be addressed are the effects of poverty, limited education of the parent(s), and the validity of current psychoeducational testing instruments for minority students. In addition, further examination should address why gender inequities favor males in classes for students with learning disabilities.

Educators and school psychologists certainly meant no malice in their ever-changing methods of identifying and placing students in programs that serve students with learning disabilities. The end result, however, has been an extraordinary, even phenomenal growth in the number of students served under this exceptionality. Even more troubling has been the disproportionate number of culturally diverse students that make up many of today's learning disabled classes.

The practice of utilizing a discrepancy formula will, in all likelihood, continue to be widely used. Therefore, the suggestions put forth in this paper are an attempt to develop more reasonable criteria to identify students with true learning disabilities. Hopefully this will prevent future students from being incorrectly labeled and possibly stigmatized. In addition, it may

reduce the over-identification of culturally diverse students. It is felt that a discrepancy formula incorporating a full scale IQ score within the broad normal range of intelligence and using significant discrepancies between IQ and achievement may go a long way toward providing better services for fewer students.

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Table 1
Gender and Ethnicity of Subjects

| Gender | Ethnicity | | |
|---|---|---|---|
| | African-American | Caucasian | Total |
| Male | 74<br>(60.2%) | 15<br>(12.2%) | 89<br>(72.4%) |
| Female | 31<br>(25.2%) | 3<br>(2.4%) | 34<br>(27.6%) |
| Total | 105<br>(85.4%) | 18<br>(14.6%) | 123<br>(100%) |

Table 2
Effects of Eligibility Criteria on Ethnicity Placement

| Question # | Students identified by | Total Eligible Students | African-American | Caucasian |
|---|---|---|---|---|
| | Current placement practices | 123 (100%) | 105 (85.4%) | 18 (14.6%) |
| 1 | 15 point discrepancy between full scale IQ and either reading or math | 72 (58.5%) | 58 (81.7%) | 13 (18.3%) |
| 2 | 15 point discrepancy and full scale IQ of 85 and above | 50 (40.6%) | 38 (76%) | 12 (24%) |
| 3 | 22 point discrepancy between full scale IQ and either reading or math | 36 (29.3%) | 29 (80.6%) | 7 (19.4%) |